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EXAMINER	
AL HASHEMI, SANA A	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GOVIND MALALUR

Appeal 2008-2062
Application 09/714,273
Technology Center 2100

Decided: December 10, 2008

Before LANCE LEONARD BARRY, ST. JOHN COURTENAY III, and THU A. DANG, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-15. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

THE INVENTION

The disclosed invention relates generally to a method and apparatus for a table lookup index that provides access to a table, such as an addressing table, in a fast and efficient manner. More particularly, Appellant's table lookup index is for the transmission of data packets in a network switch. (Spec. 1).

Independent claim 1 is illustrative:

1. A method of performing a table look-up in a network device comprising the steps of:

receiving a data packet through an input port of the network device;

parsing said data packet into an index portion and a corresponding bucket portion;

indexing, directly, said index portion to said corresponding bucket portion; and

accessing address table information stored in an address look-up table using said bucket portion.

THE REFERENCE

The Examiner relies upon the following reference as evidence in support of the anticipation rejection:

Bechtolsheim US 6,829,217 B1 Dec. 7, 2004

THE REJECTION

Claims 1-15 stand rejected under 35 U.S.C. §102(e) as being anticipated by Bechtolsheim.

CONTENTIONS BY APPELLANT

Appellant contends, *inter alia*, that there is no teaching or suggestion in Bechtolsheim of parsing the data packet into an index and a bucket portion (App. Br. 14, ¶ 2), and also that "Bechtolsheim is devoid of any teaching or suggestion of the indexing, directly, of said index portion to said corresponding bucket portion" (App. Br. 16, ¶ 1). We note that equivalent limitations are recited in each of remaining independent claims 8 and 15.

EXAMINER'S RESPONSE

The Examiner disagrees. The Examiner notes that Bechtolsheim discloses a method of parsing a packet header as disclosed at column 5, lines 31-41, and as also shown in step 302 of Bechtolsheim's Figure 3. The Examiner proffers that the claimed index is generated by transforming the extracted packet header data into an index using one of the two hash functions that Bechtolsheim describes at column 6, lines 6-26 (Ans. 5-6). However, the Examiner does not directly address Appellant's contentions that Bechtolsheim does not disclose the claimed limitations of *parsing* the data packet into an index portion *and* a bucket portion, and also indexing, directly, of said index portion to said corresponding bucket portion as recited in equivalent form in each of independent claims 1, 8, and 15.

ISSUE(S)

We have determined that the following issue is dispositive in this appeal:

> Has Appellant shown that the Examiner erred in finding that Bechtolsheim discloses the claimed limitations of parsing the data packet into an index portion and a bucket portion and also the indexing, directly, of said index portion to said corresponding bucket portion, as recited in equivalent form in each of independent claims 1, 8, and 15?

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 102, "[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation." *Perricone v. Medicis Pharm. Corp.,* 432 F.3d 1368, 1375-76 (Fed. Cir. 2005) (citation omitted).

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006). Therefore, we look to Appellant's Briefs to show error in the proffered prima facie case.

FINDINGS OF FACTS

The following Findings of Facts (FF) are shown by a preponderance of the evidence.

The Bechtolsheim reference

1. Bechtolsheim discloses that "[u]pon receipt of a packet in a given flow, 300, the packet header is parsed 302 to determine the packet size, source address, destination address, and type of service (TOS)" and also that "the UDP source and destination port (for an IP packet) or the MAC source and destination and protocol type (for Ethernet packets) may be extracted as required to fully identify the necessary TOS (Bechtolsheim, col. 5, ll. 29-36).
2. Bechtolsheim discloses two exemplary hash functions that each take as an input the extracted source and destination addresses as indicated by the code portions shown in column 6 (col. 6, ll. 12 and 24).
3. The output of Bechtolsheim's hash function is an index to flow table 335 (Bechtolsheim, col. 6, ll. 28-29).
4. Bechtolsheim discloses a primary embodiment directed to Internet Protocol (IP) packet flows, but also provides that alternative protocols such as Ethernet may be used (col. 5, ll. 19-25).
5. Bechtolsheim discloses flow table hash buckets (col. 7, ll. 9 and 33).

ANALYSIS

Independent claims 1, 8, and 15

We consider the Examiner's rejection of independent claims 1, 8, and 15 as being anticipated by Bechtolsheim.

After considering the evidence before us, and the respective arguments on both sides, we find the Bechtolsheim reference falls short of anticipating Appellant's claimed invention for essentially the same reasons

argued by Appellant in the Briefs. In particular, we agree with Appellant's observation that Bechtolsheim does not disclose parsing the data packet into an index and a bucket portion (App. Br. 14, ¶ 2), and also that Bechtolsheim does not disclose the indexing, directly, of said index portion to said corresponding bucket portion, as claimed (App. Br. 16).

Claim Construction

We begin our analysis by broadly but reasonably construing the disputed claim terms "index portion" and "bucket portion." During prosecution, "the PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)).

Here, when we refer to Appellant's disclosure for *context*, we find Appellant's claimed look-up table is accessed using an index that points to (i.e., is directly indexed to) a bucket portion that functions as a subindex into a subdivision of the look-up table. See e.g., Appellant's Figure 3 and the associated description in paragraphs [44] and [45] of the Specification.

Consistent with Appellant's Specification, we broadly but reasonably construe the claimed "index portion" as an address pointer, and we broadly but reasonably construe the claimed "bucket portion" as a subindex that is pointed to (i.e., directly indexed) by the aforementioned "index portion." (*see* independent claims 1, 8, and 15).

Given the aforementioned claim construction, we find that Bechtolsheim does not disclose parsing the incoming data packet into an index portion and a corresponding bucket portion, where the index portion is

indexed to the corresponding bucket portion, as required by the language of each independent claim before us on appeal. Instead, Bechtolsheim merely discloses that "the packet header is parsed 302 to determine the packet size, source address, destination address, and type of service (TOS)" and also that "the UDP source and destination port (for an IP packet) or the MAC source and destination and protocol type (for Ethernet packets) may be extracted as required to fully identify the necessary TOS." (FF 1).

In particular, we find that Bechtolsheim's parsed (extracted) source address and destination addresses refer to Internet Protocol (IP) (or other protocol) source and destination addresses and are not reasonably indexes or pointers that are directly indexed to a subindex (i.e., bucket portion) that further points to a subportion of a table. Each of independent claims 1, 8, and 15 requires that *both* the index portion and the bucket portion be parsed from the received data packet.

To the contrary, Bechtolsheim clearly discloses using the parsed source address and destination address as input to a hash function that *generates* (i.e., calculates) a hash index to flow table 335 (FF 2-3). While Bechtolsheim does disclose that the calculated hash index points to hash buckets (i.e., slots in a hash table) (FF 5), we find that Bechtolsheim's hash "buckets" *are not parsed from the data packet* and they are not indexed *directly* by *an index that is parsed from the data packet*, as required by each of independent claims 1, 8, and 15. Therefore, the evidence before us supports Appellant's position as argued in the Briefs. We note that "absence from the reference of any claimed element negates anticipation." *Kloster Speedsteel AB v. Crucible, Inc.,* 793 F.2d 1565, 1571 (Fed. Cir. 1986).

We conclude that Appellant has met his/her burden of showing that the Examiner erred in finding that Bechtolsheim discloses the claimed limitations of parsing the data packet into an index portion and a bucket portion and also the indexing, directly, of said index portion to said corresponding bucket portion, as recited in equivalent form in each of independent claims 1, 8, and 15.

Accordingly, we reverse the Examiner's rejection of independent claims 1, 8, and 15 as being anticipated by Bechtolsheim. Because we have reversed the Examiner's rejection of each independent claim on appeal, we also reverse the Examiner's rejection of each dependent claim on appeal.

CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude Appellant has met his/her burden of showing that the Examiner erred in rejecting claims 1-15 under 35 U.S.C. § 102(e) for anticipation.

DECISION

We reverse the Examiner's decision rejecting claims 1-15.

REVERSED

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